

Appl. No. 10/680,319
Amdt. Dated: Oct. 27, 2005
Reply to Office Action of Sep. 20, 2005

REMARKS

Claim Rejections Under 35 U.S.C. 103

Claims 1-5, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faris et al. (US 6,801,270 B2) in view of Allen et al. (US 6,919,946 B2).

Previously amended claim 1 recites in part:

A liquid crystal display, comprising...a liquid crystal panel having a reflective polarizing element...and...a backlight module having...a quarter-wave plate...wherein the liquid crystal panel is located on the backlight module, and the reflective polarizing element of the liquid crystal panel faces toward and is adjacent to the quarter-wave plate of the backlight module. (Emphasis added.)

Applicant submits that the subject matter of claim 1, as previously amended, is neither taught nor suggested by Faris et al. '270, Allen et al. '946, or any of the other references, taken alone or in combination.

Faris does disclose a liquid crystal display (100), which includes a backlight (70) (Fig. 5B). In column 6, line 34 of '270, Faris et al does mention "quarter-wave retarders", as below:

"...LCD 100 may optionally include other layers, which are desirably substantially non-absorbing, such as linear polarizers, quarter-wave retarders, diffusers, transparent substrates, and the like."

Besides the sentence recited hereinabove, there is no other disclosure in Faris

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et al., whether in the specification, claims, or figures of '270, about the "quarter-wave retarders". Furthermore, Faris et al doesn't disclose or suggest the positional relationship between the quarter-wave retarders and any other elements, not to speak of disclosing or suggesting any sort of placement relationship of such a quarter-wave retarders relative to a reflective polarizing element, in particular.

From the spirit and the scope of the invention, integrated with ordinary skill, those skilled in the art cannot conclude the positional relationship between the quarter-wave retarders and the reflective polarizing element. That is to say, the limitation that "the reflective polarizing element of the liquid crystal panel faces toward and is adjacent to the quarter-wave plate" is not disclosed or suggested by Faris et al.

Allen et al does disclose a liquid crystal display comprising a first positive o-plate, a first retarder, a liquid crystal cell, a second retarder and a second positive o-plate arranged in turn. In col. 6, line 6 of '946, Allen et al does mention "a quarter wave plate", as below:

"...In one embodiment, a reflective polarizer.....can incorporate a quarter wave plate to convert the circularly polarized light to linearly polarized light."

However, beyond the sentence recited hereinabove, in the specification, claims or figures of '946, there is no other message or disclosure about the "quarter-wave plate". Allen et al doesn't disclose or suggest the quarter-wave plate and the reflective polarizer to be distinct elements and thus does not disclose or suggest any particular alignment relationship therebetween. More specifically, Allen et al. does not even disclose or suggest how the structure of the original reflective polarizer is to be modified

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in order to also act as a quarter-wave plate (e.g., is it to be internally modified so as to perform both duties, or is it to connect two separate such elements together into, ostensibly, a single unit to achieve both functions?). Accordingly, even upon combining Faris et al. with Allen et al., there is no specific disclosure or reasonable suggestion of a "reflective polarizing element" that "faces toward and is adjacent to [a] quarter-wave plate", as required by claim 1.

Moreover, Applicant submits that the novel and unobvious physical features of previously amended claim 1 produce new and unexpected results over any combination of Faris et al and Allen et al. Namely, the reflective polarizing element and the quarter-wave plate cooperatively utilize all the light emitted by the light source for illumination. The light energy is efficiently used, and the liquid crystal display has a higher brightness.

Thus Applicant submits that previously amended claim 1 is unobvious and patentable under 35 U.S.C. 103(a) over the cited references. Reconsideration and withdrawal of the rejection and allowance of previously amended claim 1 are respectfully requested.

Claims 2-5 all depend directly or indirectly from previously amended claim 1, and therefore should also be allowable.

Claim 13 recites in part:

A method of making a liquid crystal display system, comprising steps of...providing one reflective polarizing element on a rear portion of the liquid crystal panel and in front of the

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quarter-wave plate. (Emphasis added.)

Applicant submits that even if the combining of Faris et al and Allen et al is proper, claim 13 still has novel and unobvious physical features over the stated combination.

As set forth above with respect to claim 1, neither Faris et al. nor Allen et al. discloses or suggests any particular positioning of a quarter-wave plate relative to a reflective polarizer. As such, the combination also fails to teach or suggest the limitation of "providing one reflective polarizing element on a rear portion of the liquid crystal panel and in front of the quarter-wave plate," as recited in claim 13. That is, the combination does not disclose or suggest the order of arrangement of the elements in claim 13. Accordingly, the combination clearly fails to teach or suggest the method as recited in claim 13.

Moreover, applicant submits that the novel features of claim 13 produce new and unexpected results over any combination of Faris et al and Allen et al. Namely, the method yields a liquid crystal display that has a higher brightness.

Thus Applicant submits that claim 13 is unobvious and patentable under 35 U.S.C. 103(a) over the cited references. As claim 14 depends directly from allowable claim 13, Applicant submits claim 14 should also be allowable. Reconsideration and withdrawal of the rejection and allowance of claims 13 and 14 are respectfully requested.

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Claims 6-7 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faris et al. and Allen et al. in view of Wang et al. (US Pat. 5,982,464).

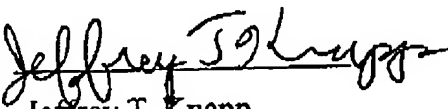
Since claims 8-12 have been canceled in the previous amendment, the rejection to claims 11 and 12 is not proper.

In further response to the rejection, Applicant offers that claims 6 and 7 depend from previously amended claim 1, which is in condition for the reasons set forth above. Accordingly, Applicant submits that claims 6 and 7 should also be allowable.

In view of the foregoing, the present application as claimed in the pending claims is considered to be in a condition for allowance, and an action to such effect is earnestly solicited.

Respectfully submitted,

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